



# EMD Transition Readiness Review

July 17, 2003

# EMD TRR Agenda



**Introduction and Agenda** -Chuck Thomas

**Open SDPS ESD/MODs Completion Dates** -Chuck Thomas

**Requirement Verification Status** -Joan Schessler

- Status of action items from Oct. 2002 EOC briefing
- Status of Open Level 3 Requirements from October 2002 (from Synergy)

**VDB Transition Plan and Status** -Joan Schessler

**Functional Configuration Audit** -Joe Spyrison

- Status of Final FCA subsequent to EOC presentation

**Performance Results of 6A.07** -Evelyn Nakamura

# EMD TRR Agenda (cont.)



## **Sustaining Engineering Status - Art Cohen**

- New capabilities since October 2002 and significant Patches
- NCR Metrics
- Status of NCRs that are liens against requirements

## **COTS -Carolyn Whitaker**

- Addresses COTS that were delivered and what will need to be addressed in EMD

## **Physical Configuration Audit -Carolyn Whitaker**

- Software PCA results only; no hardware

## **CDRL Documentation Summary -Carolyn Whitaker**

- Delineates status of documents that were planned to be delivered during the extension before EMD

## **Property Closeout -Bill Wyman**



## Open SDPS ESD/MOD Completion Dates

**Chuck Thomas**

# Open SDPS ESD Completion Dates



Number	Title	Expected completion date	Expected closure date
199	VDB Transsition	August 14, 2003	September-04
198	Support Landsat 7 Anomaly Investigation	September 29, 2003	October-03
197	Data Hiding Req. Analysis	August 15, 2003	September-03
196	EDC Silo Upgrade	September 29, 2003	October-03
195	SDP Toolkit Const. Rcd Check	August 28, 2003	September-03
194	Upgrade EDC M&O LAN PCs	complete	August-03
193	Secure Distribution Capability	November 15, 2003	December-03
192	Remote Data Storage Pilot	February 26, 2004	March-04
191	EDGRS Performance Impact Study	August 28, 2003	September-03
189	Sun Consolidation	October 31, 2003	November-03
186	Add NCEP Data Product to Archive from Landover	July 24, 2003	August-03
185	ECHO Metadada Generation from Landover	July 21, 2003	August-03
182	Fund ESDT Pool #4	complete	August-03
169	SWGD Capacity Enhancements	complete	July-03
164	Recovery and Backup Phase 1	complete	July-03
163	DAAC Re-addressing	complete	August-03
143	Increase Distribution Enhancements	complete	July-03
108	S4P Integration Prototype	July 31, 2003	August-03
101	Support Architecture Analysis	complete	August-03

# Open SDPS MOD Completion Dates



MOD#/CCR #	Title	Completion Date	Comment
MOD 144: CCR 423-01-41-229	Update ECS Contract NPG 2810.1 Security	July 31,2003	Deliver Security Access white paper containing derived requirements and COTS recommendation for cost reduction enhancements.



## Requirement Verification Status

**Joan Schessler**

# EOC OPEN REQUIREMENTS



<b>IMS-0785</b>	<b>Completed by Release of Synergy III Compression on DP Download</b>	<b>RVAR 173A</b>
<b>DADS0175 DADS0150 EOSD1600 EOSD1605 DADS0800 PGS-0200</b>	<b>Completed by verification of Aura support tickets RH_ZZ_02 and RH_XT_01 as stated on RVARs</b>	<b>RVAR 167A RVAR 306A RVAR 307A RVAR 308A RVAR 309A</b>
<b>DADS1450 DADS2307</b>	<b>Completed by publication of Operational Concept for Interfaces between EDOS and ECS for the Restoration of L0 Data (181-TP-001- 001, ESD 181)</b>	<b>RVAR 170A RVAR 171A</b>



# ESDIS EOC ACTION ITEMS



<b>Remove ASTER Interoperability from F&amp;PRS</b>	<b>Delete ASTER GDS from IMS-0380 Delete IMS-0626 Delete IMS-0828 All accepted as Verified at EOC</b>	<b>ESDIS action planned</b>
<b>ADD to SOW OSS List, the LP DAAC-Unique Extension for ASTER Expedited Processing</b>	<b>This DUE was used to test four requirements, which were accepted as Verified at EOC</b>	<b>ESDIS action planned</b>
<b>Provide direction for EDOS Backup and Restore Capability</b>		<b>Closed by completion of ESD 181</b>

# ECS EOC ACTION ITEMS



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**Addition of Any NCR Liens Existing on October 31 to Raytheon L3 Verification Report and VDB L3 Comprehensive Report**

**No new liens were opened before October 31st, 2002**

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**Notify EMOS of List of EMOS Requirements Found Within the SDPS List**

**List was forwarded to Paul Koster by Chuck Thomas via e-mail in November 2002.**

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# ECS EXTENSION ACTIONS



**Delivery of XRP Conversion to ILM has been re-scheduled to follow Sun Consolidation installation. Associated Level 3 requirements will remain open until end of October.**

<b>Ticket</b>	<b>XRP Conversion</b>	<b>SMC-2130</b>
<b>KS_XT_02</b>	<b>to Remedy - ILM</b>	<b>SMC-2205</b>
		<b>SMC-2220</b>
		<b>SMC-2300</b>
		<b>SMC-2310</b>
		<b>SMC-2320</b>
		<b>SMC-2500</b>
		<b>SMC-2503</b>
		<b>SMC-8730</b>
		<b>SMC-8770</b>

# Synergy 2, 3 Verification Status



Synergy 2 and 3 capabilities were delivered without formal verification, as agreed

Verification status of ticket and its linked L3 requirements pulled from three categories :

- Software Integration and Test Records
- Status of ESDIS NCR liens
- Operational Status of the capability at DAACs

Status for each category is recorded in ECS Synergy 2,3 Verification Status Report along with the ECS summary recommendation for each ticket

Report is included at end of today's presentation.

# Synergy 2, 3 Verification Status Report



## Tickets Affected

- 24 Tickets
- Tickets Verified per ECS Verification Status Report: 17
- Tickets awaiting ESDIS NCR lien closure : 7

## L3 Requirements Affected (as of July 17)

- Total affected by Synergy 2, 3 Tickets: 13
- Number closed per ECS Verification Status Report : 9
- Number open per ECS Verification Status Report : 4

## Actions:

- NCRs closed after July 17th to be applied to the ECS Verification Status report
- ESDIS to review and confirm ECS recommendations
- CCR to add RVARs and update the VDB L3 Requirement Comprehensive Status Report to be approved and submitted to VDB



## VDB Transition Plan and Status

**Joan Schessler**

# VDB TRANSITION



## Plan:

- VDB Maintenance Transitioned from QSS by End of August
- QSS to complete System Documents by End of August
- Software Licenses Transferred by End of August (Status Unknown)
- Hardware from Bldg 32 to Landover 2-4 Weeks after Transition Completed

## Status:

- Two Major QSS System Documents Reviewed by Raytheon
- Revisions Incorporating Comments Expected from QSS 21 July
- Training Starts 21 July
  - DBA
  - Management
  - Data Entry

## Risks:

- QSS may not complete Documentation for the 4000 Scripts by the End of August. At Least 2400 are critical
  - Mitigated VDB operations risk by hiring key VDB personnel to Raytheon Team
  - Documentation still needed for maintenance



## Functional Configuration Audit

**Joe Spyrison**



# Functional Configuration Audit



**L3 Comprehensive Status Report verified complete and accurate at EOC.**

**Subsequent status of final FCA determined by:**

- **Audited 6 Synergy and Extension Acceptance Test folders and confirmed completeness and VDB criteria status accuracy**
- **Examined EVRs/RVARs/CCRs affecting VDB and L3 Report**
- **Audited implementation of 8 Requirements status CCRs into VDB**
- **Examined all Synergy 2/3 integration test artifacts and concur in System Engineering verification status recommendations presented and attached**
- **No findings...**

**L3 Comprehensive Status Report in VDB is complete and accurate**



## 6A.07 Performance Testing Results

**Evelyn Nakamura**

# 6A.07 Performance Testing - Introduction



**This presentation summarizes the results of 6A.07 performance testing (6A07 System Release notes, January 2003).**

- **6A.07 was delivered on 30 Jan 03, and consisted of a system roll-up of NCR fixes and new and improved Synergy III capabilities.**
- **The delivery contained 6A.07 and Patch 6A.07\_System.01**
- **Workload goals used in performance testing:**
  - **EOC workload specification (SL\_ZZ\_01)**
  - **Synergy III workload specification (WL\_S3\_01)**
- **Created test scenarios which used large number of tiny granules to simulate system throughput**
- **Configured PVC with S4P for MODIS and AIRS production**
- **Modified software to collect performance metrics**

# 6A.07 Performance Testing - Introduction



- **Performance testing summary:**
  - **Jan 09, 2003: Preliminary 24-hour performance run**
    - Sybase timeslice terminated run at hour 23.
    - Stability and throughput up to that point were good.
    - Drilldowns kept to a minimum for profiling purposes.
  - **Jan 16, 2003: Final Build 24-hour performance run**
    - Sybase contention and SSS event queue backlog affected S4PM and Data pool insert performance.
  - **Jan 24, 2003: Regression 12-hour Performance run against Patch 6A.07\_System.01**
    - Validated Sybase configuration changes required to handle additional Synergy III workload.
    - Restricted Drilldown Sybase engines to 2; 10 for remainder of system
    - Increased and partitioned tempdb cache.
    - Partitioned Data Pool database cache.

# 6A.07 12-Hour Performance Run- Jan 24 2003



INGEST	Granules
<b>MODAPS</b>	
Goal	<b>6,900</b>
Actual	<b>7,862</b>
<b>MOD-T-R</b>	
Goal	<b>3,840</b>
Actual	<b>4,382</b>
<b>MOD-T-F</b>	
Goal	<b>1,920</b>
Actual	<b>2,412</b>
<b>MOD-A-R</b>	
Goal	<b>3,840</b>
Actual	<b>3,994</b>
<b>MOD-A-F</b>	
Goal	<b>1,920</b>
Actual	<b>2,136</b>

AIRS-A-R	Granules
Goal	<b>5,052</b>
Actual (S4PM)	<b>4,619</b>
<b>AIRS-A-F</b>	
Goal	<b>2,526</b>
Actual (S4PM)	<b>2,313</b>
<b>S4P PGE</b>	
<b>REPROC.</b>	
Goal	<b>2,720</b>
Actual	<b>5,220</b>
<b>FORWARD</b>	
Goal	<b>1,503</b>
Actual	<b>2,572</b>

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- Goals and actuals are for 12-hours however, workload is not spread evenly over 12-hours (\*).

# 6A.07 12-Hour Performance Run- Jan 24 2003 (cont.)



DDIST	Granules
<b>SUBS</b>	
Goal	12,627
Actual	14,421
<b>PDS</b>	
Goal	417
Act. (Reqs)	966
<b>Other Act.</b>	
Ftp pull	1,208

- Goals and actuals are for 12 hours

# 6A.07 12-Hour Performance Run- Jan 24 2003 (cont.) - Synergy III



Data Pool Inserts	Granules
Goal 24-hour	47,982
Actual 12-hour	31,334
Data Pool Drilldown	
Goal 24-hour	2,060
Actual 12-hour	1,081
Data Pool FTP Access	
Goal 24-hour	43,675
Actual 12-hour	45,029
Data Pool Cleanup	
Goal 24-hour	51,582
Actual 12-hour	47,000

- Goals are for 24 hours, actuals are for 12 hours.

# 6A.07 12-Hour Performance Run- Jan 24 2003 Summary



## 6A.07 - 12 Hour Goals/12 Hour Actuals

- INGEST overall 36397/32252 granules(112%)
- DISTRIBUTION overall 14421/12627 (114%)
  - PDS ftp push 966/417 (232%)
- S4P Processing 8726/5201 PGEs completed (168%)
  - reprocessing 5792/3276 (177%)
  - Forward processing 2934/1925 (152%)

## Synergy III - 24 Hour Goals/12 Hour Actuals

- Datapool Inserts 31334/47982 granules (65%)
- Datapool Access
  - drilldowns 1081/2060 (52%)
  - FTP accesses 45029/43675 (103%)
- Datapool Cleanup 47000/51582 (91%)





## Sustaining Engineering Status

**Art Cohen**

# Post EOC Non-Synergy Major Custom Code Enhancements



## 6A.07

- **Integration of PDS into Clearcase and EcsAssist**
- **Aura Dprep Attitude**
- **Reynolds SST**
- **Secure Ingest**
- **CheckArchive**
- **NCEP Conversion (delivery late July)**

# Post EOC Non-Synergy Custom Code Enhancements (Cont.)



## 6A.07 Enhancements (Cont.)

- **Checksum - early version 1 (delivery late July)**
- **Error Logging Improvements**
- **Operability Scripts**
- **Granule Deletion Enhancements**
- **BMGT Enhancements**
- **XRP Replacement - BLM**

# Post EOC Non-Synergy Custom Code Enhancements (Cont.)



## 6A.08 (PSR early Sept.)

- **D3 Removal**
- **IOS Removal**
- **Statically linked libraries**
- **Code built on new versions of Sun and SGI Compilers**

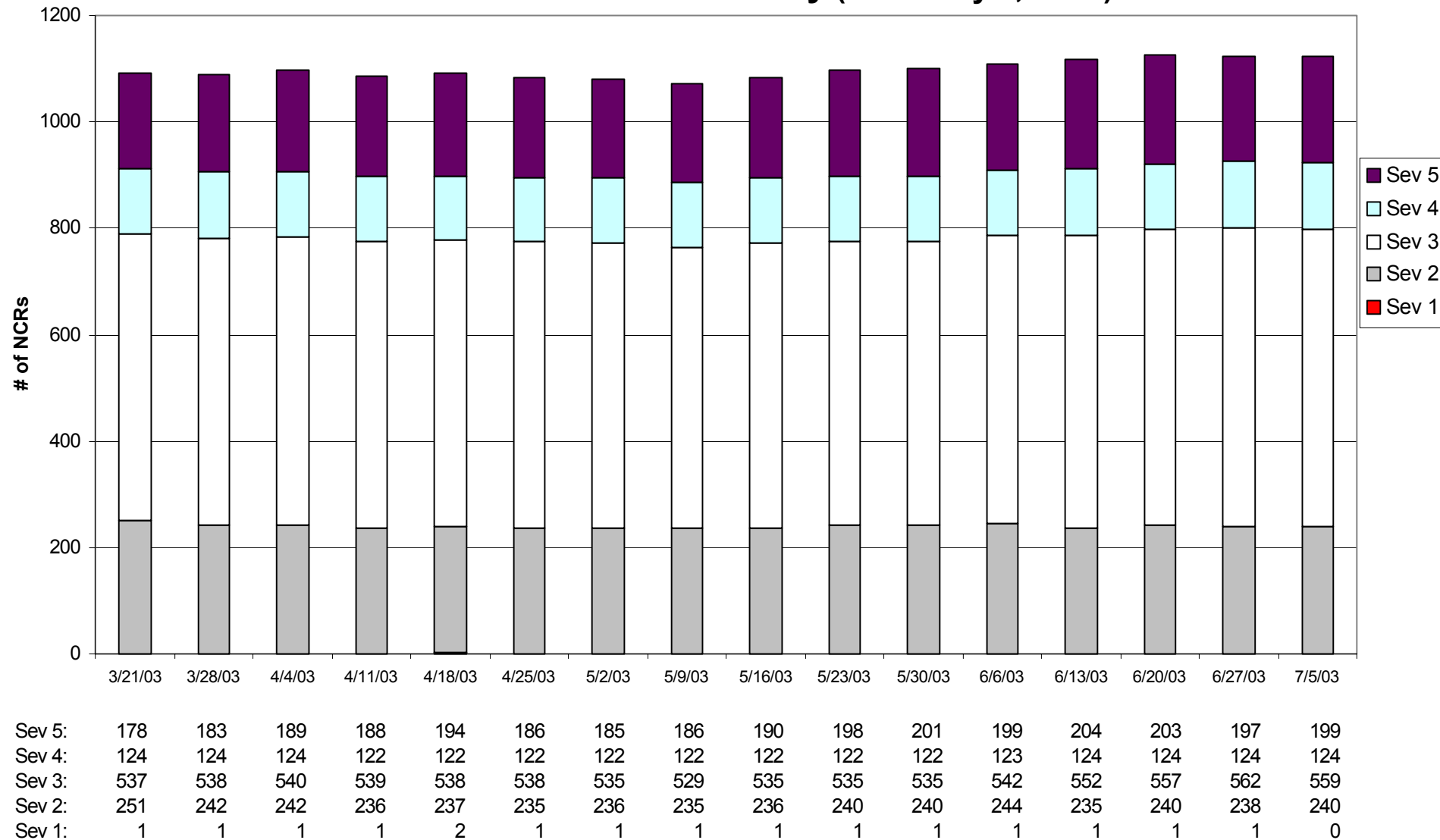
# Post EOC Non-Synergy Custom Code Enhancements (Cont.)



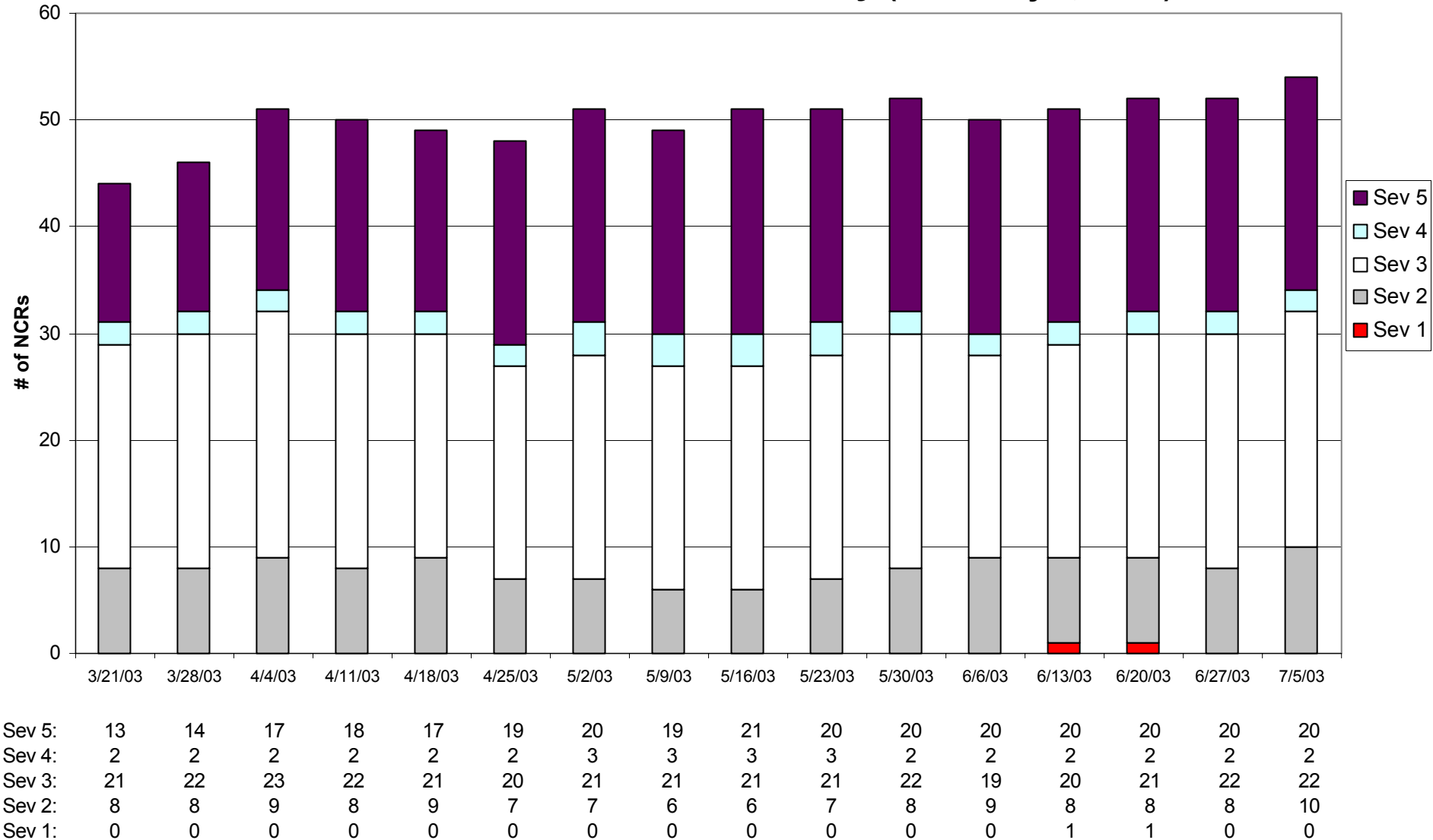
## Post 6A.08

- **Secure Distribution**
- **End-to-End Checksum**
- **XRP Replacement - ILM (PSR late August)**

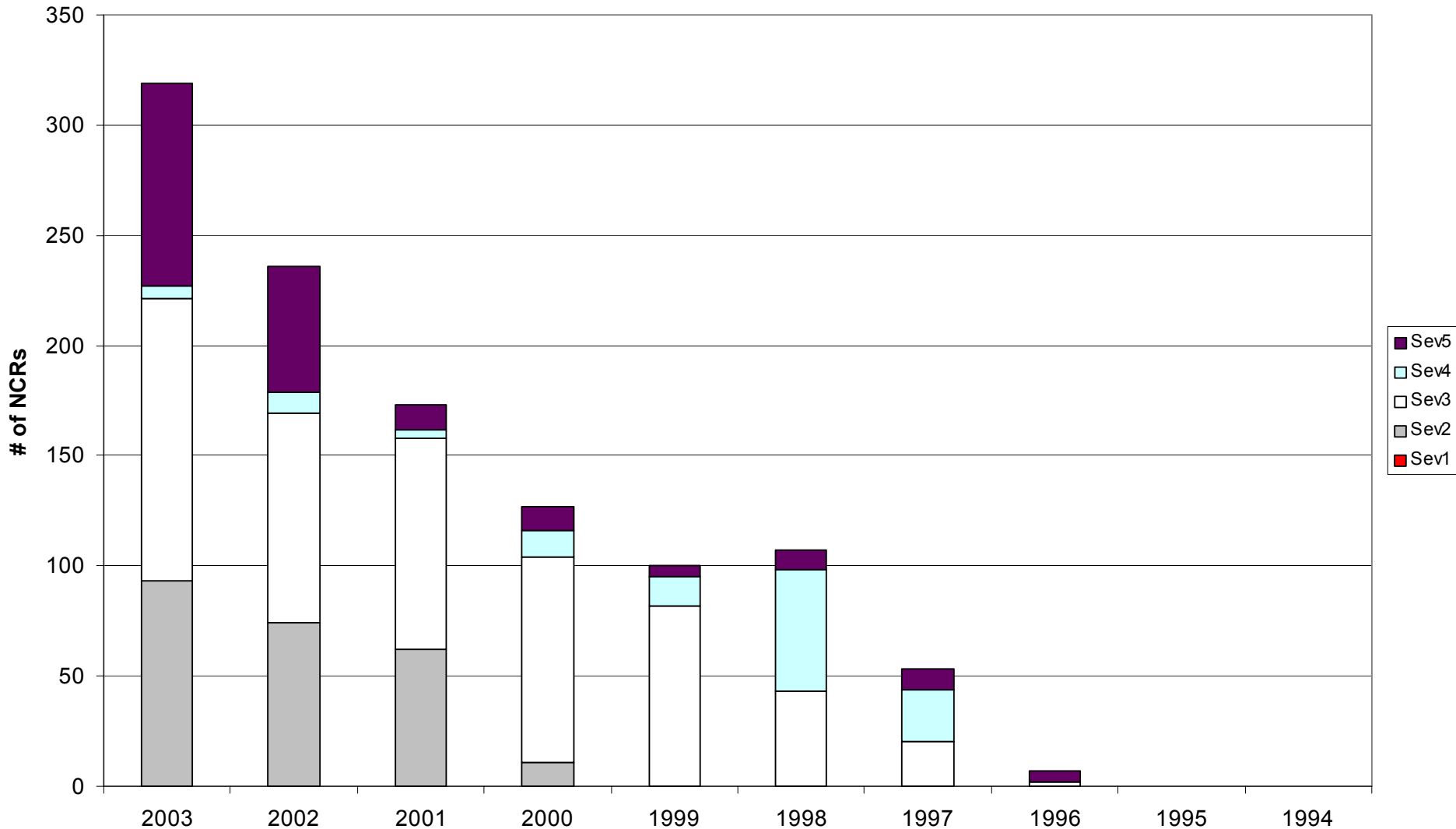
## OPERATIONS NCR Inventory (as of July 5, 2003)



## Release B0 Informal NCR Inventory (as of July 5, 2003)

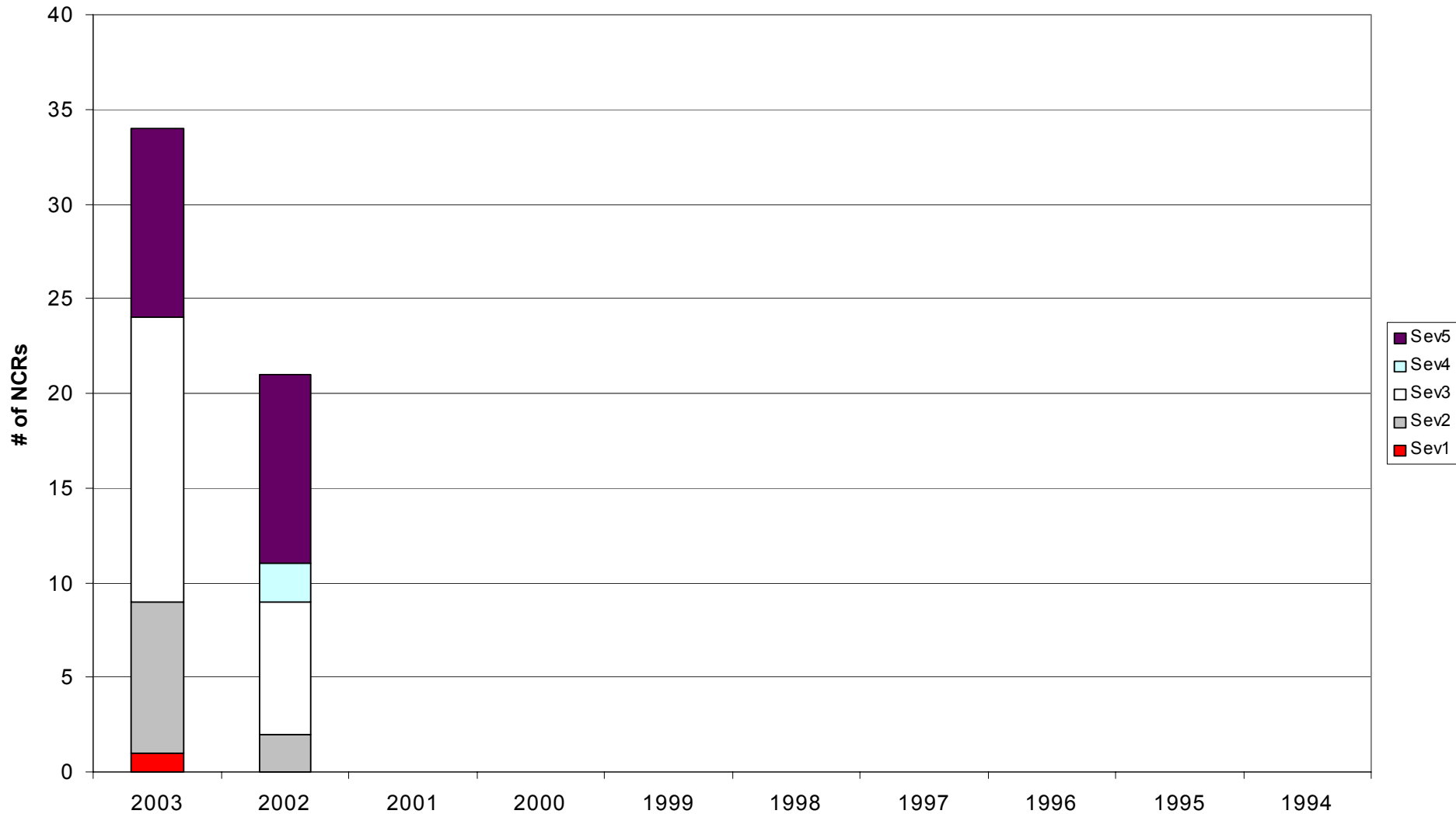


# OPERATIONS NCR Inventory by Year of Submission (as of July 5, 2003)

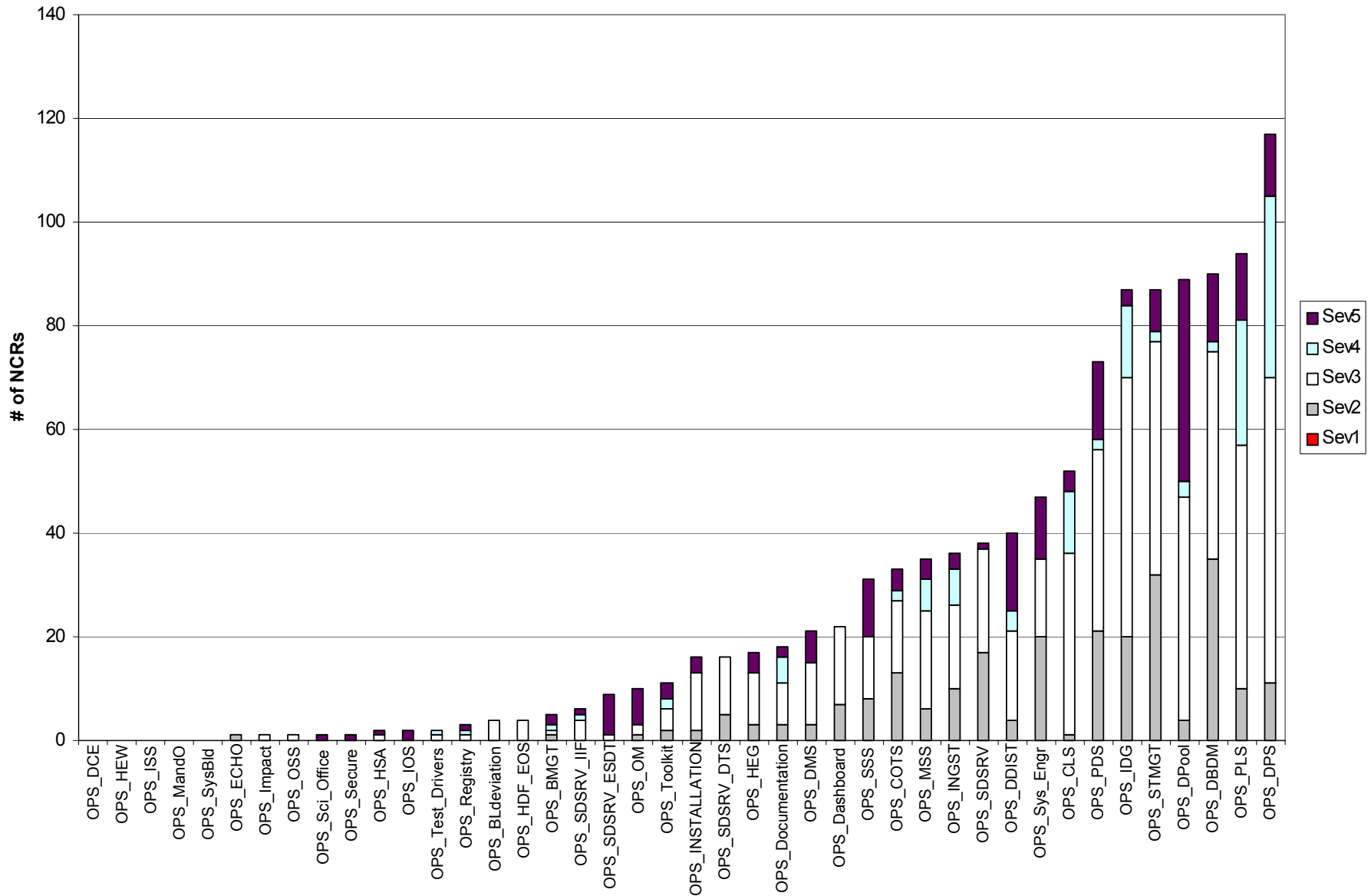




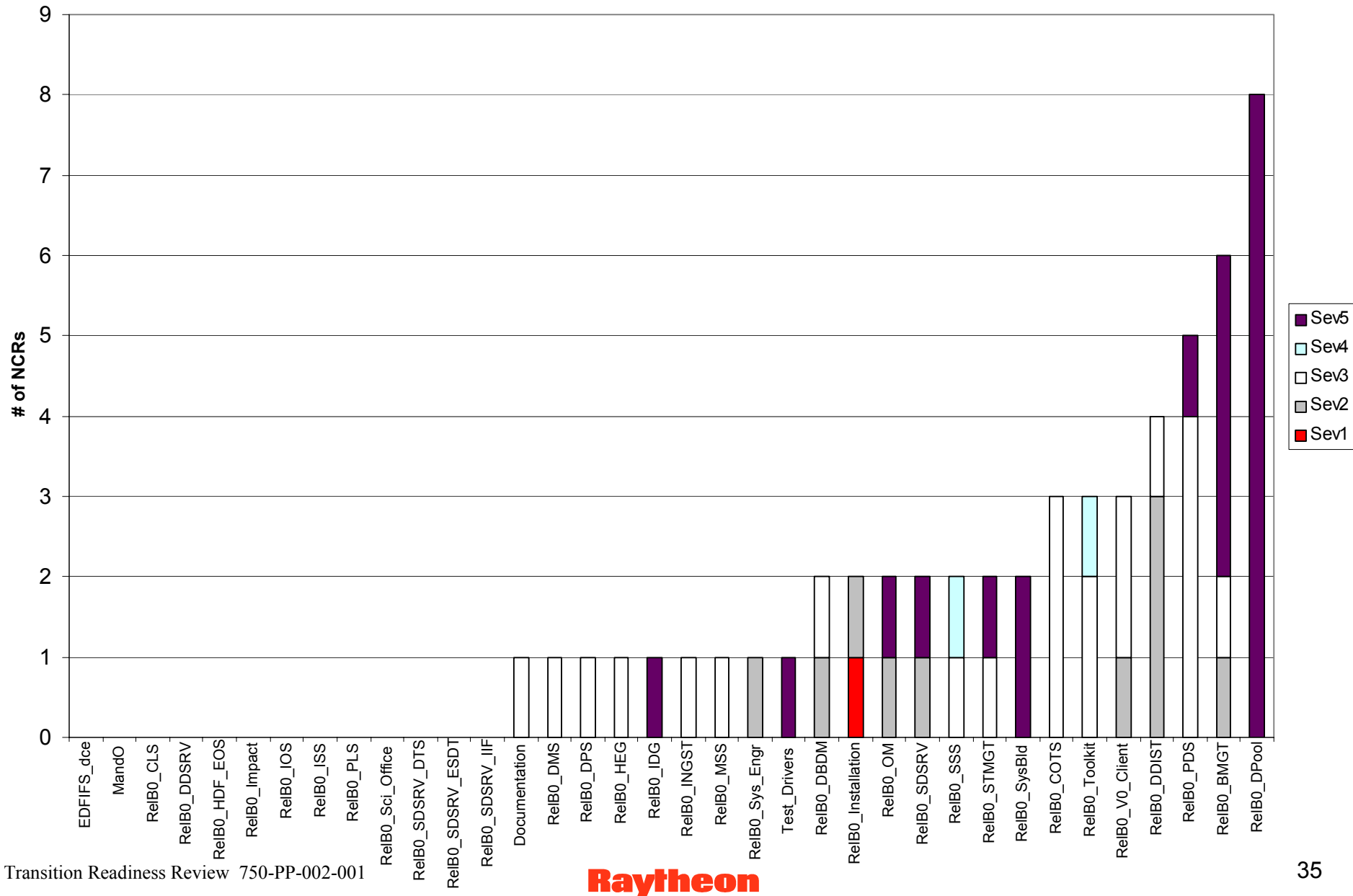
## Release B Informal NCR Inventory by Year of Submission (as of July 9, 2003)



# OPERATIONS NCR Inventory by Project (as of July 5, 2003)



# Release B Informal NCR Inventory by Project (as of July 9, 2003)



# TRR NCR LIENS



NCR	Sub syst em	Sev	St at us	Submit date	Last Mod	Test site	Build name	NCR title	Comments/Action		Est.Merge Date	Prioritized
35325	DDIST	2	T	20923	30513	SFC DAAC	Drop 6A.06+	GSFC/SMC - email address sometimes being truncated	This is the result of a failing failure/recovery scenario		Merged	
36886	DMS	2	N	30225	20819	DC DAAC	Drop 6A.07+	TS2:6A07:V0Gateway:no error returned to EDG is at least one	Dupe of 28568 which was closed on 1/14/03? This is a problem resulting from granule deletion, though there are no L3 requirements for IMS to support granule deletion. I'm mapping to DADS0491 because the problem is a consequence of granule deletions not	DADS0491	Merged	
36122	DPool	3	A	21121	20927	PVC	Drop 6A.07	DPAD: Batch inserts of nonECS granules prioritized over SSS	goes against L4 requirement	DADS2676	Verified - NAB (see 37219)	
37407	DPS	2	M	30501	30513	aRC DAAC	Drop 6A.07+	Jobs being scheduled to run on l0spg11 when PGE limits are	Engineering release has been made		Merged	
37567	HEG	2	B	30521	30617	NSIDC DAAC	Drop 6A.07+	6A.07 OPS - DataPool HEG orders impacting system resources		DADS0810	Merged	
36911	IDG	2	V	30227	30519	DC DAAC	Drop 6A.06+	OPS.No ECS notification sent to DAR users once scenes from DAR are	DAAC will close NCR. Using wrong ESDT version	IMS-1071	Verified	
35352	MSS	2	T	20927	30516	EDF	Drop 6A.06+	MSS Sets Request State to Pending by Default	Violates L4 in ticket RM_5B_05.		Merged	

# TRR NCR LIENS CONT.



NCR	Sub syst em	Sev	St at us	Submit date	Last Mod	Test site	Build name	NCR title	Comments/Action		Est.Merge Date	Prioritized
37176	SSS	5	T	30402	20925	SFC DAAC	Drop 6A.06+	GSFC/SMC: Cannot set subscriptions on standard QA PSAs	Now we can't generate subscriptions for inputs of replacement orbit for Terra	PGS0457	Merged	
37680	BMGT	2	N	30606	30606	EDC DAAC	Drop 6A.07+	OPS:6A.07_BMGT.03:Missing corners in ASTER BMGT exports		DADS2480	31-Jul	#43
37630	DBDM	2	R	30602	30617	EDC DAAC	Drop 6A.07+	OPS: COTS: Sybase: Improve security for 5 DSS scripts	2810.1	EOSD1990	31-Jul	#41
37637	DBDM	2	R	30602	30617	EDC DAAC	Drop 6A.07+	OPS: COTS: Sybase: Improve security for 3 utilities	2810.1	EOSD1990	31-Jul	#42
37738	DBDM	2	A	30616	30617	EDC DAAC	Drop 6A.07+	Storage Managment Control Batch Delete will not open	Gran delete performance problem	DADS0491	31-Jul	#12
37682	DDIST	2	N	30606	30618	PVC	Drop 6A.07+	Order of MODIS subsetted data failed in V0Gateway		DADS0810	31-Jul	N
36672	DDIST	2	R	30129	30513	SFC DAAC	Drop 6A.06+	GSFC/SMC: PDS file sizes in distribution does not match	For whatever reason (INS or DDIST) we are not spitting out what we received. We are thus unable to distribute some granules in the archive correctly.	DADS2430	31-Jul	#77
37671	DMS	2	N	30605	30605	EDC DAAC	Drop 6A.07+	6A.07 ASTER OnDemand Matrix type processing option fail		IMS-0922	31-Jul	N
36038	DPool	3	A	21114	20819	EDF	Drop 6A.07	Insert: insufficient log detail indicating nonECS granule inserts		DADS2676	31-Jul	#44

# TRR NCR LIENS CONT.



NCR	Sub syst em	Sev	St at us	Submit date	Last Mod	Test site	Build name	NCR title	Comments/Action		Est.Merge Date	Prioritized
35884	SDSRV	2	N	21105	30519	PVC	Drop 6A.06+	Larger subinterval of L7 floating scenes acquire failed	can't order certain L7 data; problem limited to test data set, and possibly real data sets with same characteristics (over pole)	DADS0740	31-Jul	N
35950	Sys_Er	2	R	21111	30203	DC DAAC	Drop 6A.06	DATA POOL Unviewable HDF	gige related		31-Jul	#89
37642	Toolki	3	N	30603	30604	EDF	Drop 6A.07+	It is neccessary to modify orbsim and PGS_EPH_EphAtt_unInterpo late	Estimated fix time 60 hours, 100 SLOC		31-Jul	#87
36640	DPool	3	N	30128	30402	PVC	Drop 6A.06+	Webaccess: time of day counts incorrect	drill-down searches problem. Need to wait for resource to finish higher priority items. Waiting for resource availability.	DADS2676	15-Aug	#86
37553	Sys_Er	2	A	30520	30520	EDC DAAC	Drop 6A.07+	ARCHIVE DELETE takes too long to complete	Gran delete performance problem. <b>Vendor (ADIC) sees fix as an enhancement and does not have a defined schedule for fix. SE is still investigating and trying to identify something that could alleviate the problem in the near term.</b>	DADS0491	30-Sep	N
37599	Sys_Er	2	B	30529	30617	EDC DAAC	Drop 6A.07+	unix commands respond poorly in the amass application	<b>See 37553 comments.</b>		30-Sep	#15

# Transition Readiness Review



**COTS**

**Carolyn Whitaker**

# COTS Software Upgrade Status



- **33 COTS PSRs completed**
- **15 COTS PSRs planned for completion 8/1/2003 – 12/31/ 2003**
- **Additional COTS will be planned/scheduled due to known problems, new vendor releases, new requirements**



# COTS Software Upgrades during Extension



COTS Product	Upgraded Version	PSR Date
Anlpassword	3.0	10/30/2002
Legato Networker for PCs	6.1.2	11/13/2002
JDOM/Xerces	1.0beta8/2.0.1	11/14/2002
SQS	3.4.2.9	11/14/2002
BDS/HiPPI	2.3/4.0	12/09/2002
IBM Firewall OS Maintenance Level	4.3.3ML10	12/10/2002
PERL Convert-Bin-Hex Module	1.119	12/13/2002
JAF & JavaMail for SGI	1.0.1/1.2	1/12/2003
ClearCase BLM	2002.05	1/21/2003
TSAPD/SGI patch	2.3/4536	2/2003
QFS	3.4.0-64a	2/04/2003
IBM Firmware Upgrade for Firewall Server	CL020916	2/06/2003
WU-FTP for Sun & SGI	2.6.2	2/11/2003
TPSSM Raid Software	6.0.1	3/11/2003
ACSLs	6.1	3/20/2003
AMASS	5.3.1	3/20/2003

# COTS Software Upgrades during Extension (cont)



COTS Product	Upgraded Version	PSR Date
Portus	5.05	4/03/2003
SANergy for SGI & Sun	3.2.1.6/3.2.1.8	4/10/2003
ClearCase	2002.05	4/15/2003
Mozilla (Netscape Comm. for SGI	1.1	5/08/2003
Netscape Communicator (Sun)	7.0	5/08/2003
Solaris 8 Patch Upgrade	Sun Rec.	5/08/2003
PERL for PDS QA PC	5.6.1	5/15/2003
Purify	2003.06.00	5/15/2003
Direct Broadcast Linux PC	7.0	5/20/2003
WhatsUp Gold	8.0	5/23/2003
Interdrive for Rimage & QA PC	7.0	5/29/2003
Firewall IBM OS "file" patch	n/a	6/02/2003
PERL Modules (HiRes, etc.)	1.43	6/17/2003
Sun One Compilers	7.0	6/24/2003
IRIX	6.5.17m	7/17/2003 *
MIPS Pro Compilers/ProDev Workshop	7.3.1.3 / 2.9.2	7/17/2003 *
RDAC	8.30.02.00	7/23/2003 *
Santricity	8.30.G2.00	7/23/2003 *

# COTS Software Upgrades Planned



COTS Product	Upgraded Version	PSR Date
Secure Shell Commercial	3.2.3	8/27/2003 *
Windows 2K	2000	8/08/2003 *
XRP ILM Remedy Replacement	4.5.2	8/12/2003 *
eBorder	4.0	8/13/2003 *
Rimage Producer Suite	6.0.35.1	08/14/2003 *
IBM Java Bean FTPClient	New	8/15/2003 *
JRE for Solaris/IRIX	1.4.1	8/15/2003 *
IMSL C Numeric Libraries	5.0	9/02/2003 *
Legato Networker	7.0	9/02/2003 *
Tomcat	4.1.24	9/25/2003 *
Secure Shell for PCs	5.2	9/26/2003 *
Sybase ASE EBF	12.5.0.3	10/08/2003 *
Forcheck	13.02	12/01/2003 *
LDAP	TBD	12/09/2003 *
Remedy PC Install	4.5.2	12/09/2003 *
RogueWave Libraries	Edition 4	Under review
AIX 5.x Upgrade for Fire wall	5.x	TBD
Oracle Enterprise and Developer Migration	TBD	3/29/2004 *

# COTS Hardware Upgrade Status



- SGI Challenge Release – Complete April 2003
  - Power Challenge replacement
  - HiPPI Network Replacement with GigE
  - Some SCSI RAID Replacement (NSIDC, partial GES DAAC)
  - FTP Pull Space increase
  - PVC prototype Sun Consolidation Platform
- SWGD II 9940B installations – Complete March 2003
- Synergy III – Complete April 2003
  - Direct Broadcast
  - 23 9940As Transferred from GFDL to DAACs
- Firewall Upgrade
  - CPU Upgrade – Complete March 2003
- ESD 196: 9940A Replacement - Completion by September 03

# COTS Hardware Upgrade Status (cont)



- ESD 189: Sun Consolidation – October 2003
- Refreshment technology
  - Linux PCs for Toolkit – CCR Started, Delivery August 2003
- Rimage Upgrades (2 complete systems; 4 drive upgrades)
  - procurement complete
  - installations to complete August 2003
- Synergy IV
  - CPU & Memory Upgrade for Data Pool – GES DAAC complete; Other DAACs by December 2003
  - Data Pool SAN upgrade – December 2003



## Physical Configuration Audit

**Carolyn Whitaker**

# Extension PCA Results



- **Purpose** – compare the ‘as built’ configuration to the ‘as approved baseline’ configuration to verify the integrity of the system
- **Audit Information Gathering Process**  
Remote interrogations are performed on all ECS baselined hosts. This data is compared to specific versioned technical documentation and discrepancy reports are generated. Post processing is performed on these reports that provide the percentage data.
- **Audit Results** generated based on contents of the new ClearCase BLM baseline which is accurate for approved CCRs

# Extension PCA Results



- **Audit Results reported by 4 categories:**
  - **COTS:** B/L COTS S/W which is installed correctly (version + path)
  - **O/S Patches:** Installed in accordance with B/L
  - **Custom:** Executables on B/L hosts
  - **UNIX Kernel:** Parameters on B/L
- **Last official DAAC audit completed in December 2001, 6A SRA**
- **Changes reflected since 6A SRA**
  - **PVC/VATC** shows approximately 15% increase (since 6A CSR, on 4/17/01; old PVC to new PVC had 50% change in hosts)
  - **DAACs** have shown a decrease in all audit compliance categories, except Custom Code. Script checks custom code compliance only to the version identifier level (e.g., 6A07EBF1), not the complete identifier used for TEs and patches.



# PCA 6A Configuration Audit Results (December 2001)



- **EDC:**

– COTS	68.7 %	- Custom	96.7 %
– O/S Patches	98.3 %	- UNIX Kernel	100.0 %

- **GSFC:**

– COTS	64.5 %	- Custom	95.6 %
– O/S Patches	91.2 %	- UNIX Kernel	100.0 %

- **LaRC:**

– COTS	62.5 %	- Custom	83.5 %
– O/S Patches	97.4 %	- UNIX Kernel	100.0 %

- **NSIDC:**

– COTS	66.2 %	- Custom	97.8 %
– O/S Patches	97.4 %	- UNIX Kernel	100.0 %

# Extension PCA Results - EDF



- **PVC:**

– COTS	86.2 %	- Custom	100 %
– O/S Patches (Sun)	91.6 %	- UNIX Kernel	78.0 %
– O/S Patches (SGI)	87.6 %		

- **VATC:**

– COTS	73.6 %	- Custom	100 %
– O/S Patches (Sun)	89.7 %	- UNIX Kernel	84.0 %
– O/S Patches (SGI)	79.1 %		

- **Expect to see differences in the PVC and VATC since they are integration and test environments**
  - **Software is installed and tested in advance to be added to the baseline**

# Extension PCA Results - DAACs



- **LP DAAC:**

- COTS 68.5 %
- O/S Patches (Sun) 86.1 %
- O/S Patches (SGI) 76.1 %

- Custom 100 %
- UNIX Kernel 86.0 %

- **GSFC:**

- COTS 47.8 %
- O/S Patches (Sun) 82.4 %
- O/S Patches (SGI) 40.3 %

- Custom 97.0 %
- UNIX Kernel 74.0 %

- **LaRC:**

- COTS 44.1 %
- O/S Patches (Sun) 80.5 %
- O/S Patches (SGI) 56.3 %

- Custom 97.0 %
- UNIX Kernel 72.0 %

- **NSIDC:**

- COTS 61.9 %
- O/S Patches (Sun) 88.5 %
- O/S Patches (SGI) 74.5 %

- Custom 100 %
- UNIX Kernel 88.0 %

# Extension PCA Results Comments



## Key Discrepancy Reasons

- DAACs move ahead of Landover B/L without notifying CM
- Approved CCRs have not been implemented
- Backlog of COTS upgrade implementation CCRs (30 % in some cases)
- Approximately 5% of the O/S patch numbers attributable to CCR submission errors
- Approximately 4% of the COTS S/W numbers attributable to sites installing in non-B/L paths, or assigning different file permissions to files/directories
- Some COTS S/W not installed in accordance with Release Notes

# Extension PCA Conclusions



- **No reported problems of ECS at the DAACs observed because of COTS baseline mismatches**
- **Areas of concern:**
  - **Lack of OS upgrades and the installation of non-B/L OS patches may be causing certain custom code executables to function differently than at Landover.**
  - **Lack of vendor maintenance support for older versions of COTS**
- **Recommendations:**
  - **Generate audit results CCRs on a site by site basis for disposition at the DAACs.**
  - **Adjust Landover B/L to the 'as built' configurations if there is no impact**
  - **Replace the Landover CM tool, CDMTS, with web based tool or customized tool to provide better change visibility for the DAACs**
  - **Increase coordination between DAACs and Landover to plan and implement upgrades on a more timely basis.**
  - **Provide applicable Landover inputs into the DAAC CCB process**



## CDRL Documentation Summary

**Carolyn Whitaker**

# CDRL Overview



- **List of CDRLs with dispositions submitted for customer concurrence at EOC October 2002. No response received, so proceeding as if received concurrence.**
  - **20 CDRLs identified for No Future Delivery**
    - DID 102: ECS Configuration Management Plan
    - DID 111: Monthly Progress Report
    - DID 120: Monthly Manpower Report
    - DID 205: Science User's Guide & Ops Procedures Handbook
    - DID 209: External Interface Control Documents
    - DID 218: Project History & Lessons Learned
    - DID 219: Interface Requirements Document
    - DID 302: ECS Facilities Plan
    - DID 308: Software Development Plan
    - DID 409: ECS Science Acceptance Plan
    - DID 519: Maintainability Demonstration Test Reports
    - DID 533: Response to Problem Notices and Alerts
    - DID 535: Acceptance Data Package
    - DID 602: Property Management Plan
    - DID 603: Operational Readiness Plan
    - DID 608: ECS Operations Plan
    - DID 618: Replacement Part List and Spare Parts List
    - DID 714: CSR Presentation Package
    - DID 222: COTS Analysis & Modeling Report
    - DID 334: Science System Release Plan
  - **22 CDRLs identified for EOC Delivery**

# Extension CDRL Summary



- **7 CDRLs available via Electronic Access (EA)**
  - **DID 108: Logic Network Diagram (P3)**
  - **DID 113: Intermediate Bar Charts (P3)**
  - **DID 115: 3 Week Window Report (P3)**
  - **DID 304: Segment Requirements Specification (VDB)**
  - **DID 411: ECS Science Acceptance Test Procedures (Web Access)**
  - **DID 529: Malfunctions/Failure Reports (DDTS)**
  - **DID 534: Maintenance Records (ILM database)**
- **2 CDRLs delivered on monthly basis during extension**
  - **DID 109: Performance Measurement Status Report**
  - **DID 119: Contractor Cost Reporting – 533 Requirements**



# Extension CDRL Summary (cont)



- **5 Planned CDRLs delivered during extension**
  - **DID 305: Segment/Design Specification (by 7/31/2003)**
  - **DID 609: Operations Tools Manual (5/5/2003)**
  - **DID 611: Mission Operations Procedures (by 7/31/2003)**
  - **DID 625: Training Materials (by 7/31/2003)**
  - **DID 335: COTS (hardware and software) Deployment Plan (3/6/2003)**
- **5 As Required (AR) CDRLs delivered during extension**
  - **DID 214: Security Plan for Science System/Mission Systems (by 7/31/2003)**
  - **DID 215: Risk Management Plan – PVC/VATC and SMC (by 7/31/2003)**
  - **DID 313: ECS Internal ICDs (4/18/2003)**
  - **DID 333: PGS Toolkit Users Guide for the ECS Project (4/18/2003)**
  - **DID 225: Security Contingency Plan – PVC/VATC and SMC (by 7/31/2003)**
- **1 AR CDRL not delivered during extension**
  - **DID 311: Database Design and Database Schema (no update until Syn 4)**

# Extension CDRLS



CDRL Item #	DID #	Title	CDRL* Schedule	Extension Delivery	Comments
008	108/MG3	Logic Network Diagrams	Electronic access provided to the government	EA	Customer has electronic access (EA) as directed by CCR 505-01-41-181-R2 approved 9/15/98. Also receives hardcopy updates per the 447. P3 availability continued through extension period.
009	109/MG3	Performance Measurement Status Report	Monthly	X	<b>Delivered Monthly during the extension.</b>
013	113/MG3	Intermediate Bar Charts	Electronic access provided to the government	EA	Customer has electronic access as directed by CCR 505-01-41-181-R2 approved 9/15/98. Also receives hardcopy updates per the 447. P3 availability continued through extension period.
015	115/MG3	3 Week Window Report	Electronic access provided to the government	EA	Customer has electronic access as directed by CCR 505-01-41-181-R2 approved 9/15/98. Also receives hardcopy updates per the 447. Weekly reports continued to be distributed during extension period.
019	119/MG3	Contractor Cost Reporting - 533 Requirements	Monthly & quarterly	X	Will continue as scheduled on a monthly basis during extension. <b>Delivered Monthly during the extension.</b>
034A 034B	214/SE1	Information Technology Security Plan for Science System/Mission Systems	Final Science and Mission Systems Version December 15, 2000 <b>Maintained through EOC</b>	X/AR	EOC version to reflect security assessment requirements planned. Extension period update, as required. <b>Delivered on 11/20/02 for EOC. Updated version required for extension after EDF scan. To be delivered by July 31, 2003.</b>
035A 035B	215/SE3	Risk Management Plan for Science Systems/Mission Systems	Final Science and Mission Systems Version December 15, 2000 <b>Maintained through EOC</b>	X/AR	EOC version to reflect security assessment requirements planned. Extension period update, as required. <b>Delivered 3 (GSFC, SMC, PVC/VATC) in November '02 for EOC deliveries. Updated version of PVC/VATC required for extension due to Security Scan results. To be delivered by July 31, 2003.</b>
045	304/DV1	Segment Requirements Specification	PDR/IDR -2weeks Delivery per DID 334 <b>Maintained through EOC</b>	EA	Electronic delivery. Last formal delivery of document in 1996. Requirements transitioned to customer controlled Verification Database (VDB) post Mod86 Restructured Contract Requirement in 1999. ECS Level 3 Reconciliation Report provides the remaining information necessary for this CDRL. That report was available at EOC <b>and continues to be maintained until open requirement actions are complete.</b>

# Extension CDRLS (cont)



CDRL Item #	DID #	Title	CDRL* Schedule	Extension Delivery	Comments
046	305/DV3(P) 305/DV2(F) 305/DV2(UD)	Segment/Design Specifications	PDR/IDR -2weeks CDR - 2 weeks (F) RRR -2 weeks (U/D) Delivery per DID 334 <b>Maintained through EOC</b>	X	EOC version delivered August 2002. Web page access to design information will also be available. <b>Extension delivery by July 31, 2003.</b>
050	311/DV2	Database Design and Database Schema Specifications	PDR/IDR +1 month (P), CDR +1 month (F), RRR +1 month (U/D) Delivery per DID 334 <b>Maintained through EOC</b>	X/AR	CDRL consists of multiple volumes which are planned for EOC delivery. Document updates resulting from Synergy 3 updates will be generated on an as required basis during the extension period. <b>No deliveries made. Per Dev, not planning to do anything until a major release, like Synergy IV.</b>
051	313/DV3	ECS Internal ICDs	PDR/IDR -2 weeks (P), CDR -2 weeks (F) Delivery per DID 334 <b>Maintained through EOC</b>	X/AR	EOC version delivered August 2002. Document updates resulting from ongoing ECS activities and Synergy 3 will be generated on an as required basis during the extension period. <b>Delivered 3/26/03.</b>
062	333/DV1	PGS Toolkit Users Guide for the ECS Project	(F) SDR -6 months Delivery per DID 334	X/AR	EOC version planned. Will release in Extension on an as required basis, depending on ESDs or NCRs. <b>Delivered 4/18/03.</b>
070	411/VE1	ECS Science Acceptance Test Procedures	3 months prior to RRR or per DID 334 <b>Maintained through EOC</b>	EA	Electronic delivery. DID 411 procedures approved and posted to web prior to 6A acceptance (CSR). All procedures thru EOC have been posted. Synergy 3 procedures were posted for electronic access as they were completed during the extension.
102	529/PA3	Malfunctions/Failure Reports (MFRs)	Electronic delivery	X/EA	Electronic delivery. DDTS database satisfies this CDRL.

# Extension CDRLS (cont)



CDRL Item #	DID #	Title	CDRL* Schedule	Extension Delivery	Comments
107	534/PA1	Maintenance Records	On-going - available for review on request	X/EA	Electronic delivery. Electronic database (ILM) will be delivered to customer, but hardcopy of specific records can also be requested in the interim.
116	609/OP1	Operations Tools Manual	CSR -2 weeks <b>Maintained through EOC</b>	X	EOC version delivered September 2002. Extension period update is planned to accommodate COTS upgrades after 9/5/2002, as well as those planned during the extension period. <b>Delivered 5/5/03.</b>
117	611/OP3	Mission Operations Procedures	Delivery per DID 334 <b>Maintained through EOC</b>	X	EOC version to reflect currently fielded system planned. Updates introduced during extension period will be provided on an as required basis. However, with COTS upgrades and NCR changes anticipated, an extension period update is also anticipated. <b>July '03 delivery planned.</b>
129	625/OP3	Training Material	Delivery per DID 334 <b>Maintained through EOC</b>	X	EOC version to reflect currently fielded system training information planned. Updates introduced during extension period will be provided on an as required basis. However, with COTS upgrades and NCR changes anticipated, an extension period update is also anticipated. <b>July '03 delivery planned.</b>
148	335/DV2	COTS (hardware and software) Deployment Plan	Submit a minimum of 6 months prior to deployment of COTS	X	EOC version delivered July 2002; delivery planned during extension period. <b>Delivered 3/6/03.</b>
198A 198B	225/SE3	Security Contingency Plan for Science Systems/Mission Systems	Final Science and Mission Systems Version December 15, 2000 <b>Maintained through EOC</b>	X/AR	EOC version to reflect security assessment requirements planned. Extension period update, as required. <b>Delivered 3 (GSFC, SMC, PVC/VATC) in November '02 as part of EOC requirements. Updated version of PVC/VATC required for extension due to Security Scan results. To be delivered by July 31, 2003.</b>

# Transition Readiness Review



## Property Closeout

**Bill Wyman**



## Meeting with NASA and Raytheon 2 July 2003

- DD 250 will be required to transfer SDPS “system” to government. To be completed by July 25, 2003.
- Only EMD peculiar property will be transferred to the EMD contract.
- Excess ECS hardware and items not transferred to EMD will continue to be worked using ECS budget authority. The excess property will be resolved by no later than December 31, 2003.
- Raytheon will continue to be responsible for EMOS property until the ECS contract is completed.

# Property Closeout (cont.)



- Synergy property at universities will be transferred to universities. NASA property and contracts are currently working details. Developed method to transfer future Synergy buys to universities.
  - Special procedures will be used for Oxford University. Property will be reported to DCMA Plant Clearance and Plant Clearance will direct transfer to Oxford.
  - Battelle Pacific Northwest National Lab is an FFRDC. NASA property has to determine how to transfer property to an FFRDC.
  - ASF property will be transferred to ASF. Raytheon and NASA working transfer documentation. 20-4 taken to GSFC on 11 July. NASA and ASF need to complete internal processing before database can be updated.



## Specific ECS to EMD property transfer procedures.

- Simplified procedure because Raytheon is incumbent contractor.
  - Raytheon will submit GFP list to NASA during first week of August. That list will become initial GFP list to the EMD contract.
  - ECS property tags will not be removed. New tags will only be placed on property received under EMD task orders.
- Following are categories of property that will transfer to EMD
  - HW used the the Development Facility including all property currently being used by Raytheon to maintain EMD code. The VATC and PVC are included in this category.
  - ECS hardware at the DAACs.
  - Consumables on hand at Landover
  - Engineering property (hardware) that applies to EMD HW



# Property Closeout (cont.)



- Following are categories of property that will not transfer to EMD
  - All EMOS property including EMOS Denver, EMOS GSFC and ISTs
  - Synergy property at universities and ASF property
  - Property reported as ECS excess
  - Property at Landover not does not apply to EMD hardware.

# Transition Readiness Review



## Addendum



# EOC CDRLS

Chuck Thomas

# EOC and Extension CDRLS



## • EOC and extension CDRLS spreadsheet

CDRL Item #	DID #	Title	CDRL* Schedule	No Future Delivery	EOC Delivery <sup>1</sup>	Extension Delivery	Comments
002	102/MG1	ECS Configuration Management Plan	1 week prior to PMR	X			No future delivery planned. All applicable updates made in April 2001 delivery.
008	108/MG3	Logic Network Diagrams	Electronic access provided to the government		EA	EA	Customer has electronic access (EA) as directed by CCR 505-01-41-181-R2 approved 9/15/98. Also receives hardcopy updates per the 447. P3 availability will continue through extension period.
009	109/MG3	Performance Measurement Status Report	Monthly		X	X	Will continue as scheduled. Should continue through extension.
011	111/MG3	Monthly Progress Report	Monthly	X			Verbal agreement between ECS Program Controls and ESDIS counterparts to stop delivery as data covered in this document is part of the PMR (Program Management Review). Waiting on formal agreement. (Last delivery made January 2002). Monthly PMR will continue
013	113/MG3	Intermediate Bar Charts	Electronic access provided to the government		EA	EA	Customer has electronic access as directed by CCR 505-01-41-181-R2 approved 9/15/98. Also receives hardcopy updates per the 447. P3 availability will continue through extension period.
015	115/MG3	3 Week Window Report	Electronic access provided to the government		EA	EA	Customer has electronic access as directed by CCR 505-01-41-181-R2 approved 9/15/98. Also receives hardcopy updates per the 447. Weekly reports will continue to be distributed during extension period.
019	119/MG3	Contractor Cost Reporting - 533 Requirements	Monthly & quarterly		X	X	Will continue as scheduled on a monthly basis during extension.
020	120/MG3	Monthly Manpower Report	Monthly	X			Verbal agreement between ECS Program Controls and ESDIS counterparts to stop delivery as data covered in this document is part of the PMR (Program Management Review). Last delivery made January 2002. Monthly PMR will continue during extension period.
025	205/SE1	Science User's Guide & Ops Procedures Handbook	Vol. 4 (D)SRR -1 Month (F)SDR; Vol. 1 - 3 (D) CDR -1 Month Delivery per DID 334	X			No future delivery planned, but change pages would be submitted as applicable during the extension period.
029	209/SE1(F) 209/SE2	External Interface Control Documents (ICDs)	Completed New interfaces per DID 334	X			No future delivery planned, but change pages would be submitted as applicable during the extension period.

# EOC and Extension CDRLS (cont.)



CDRL Item #	DID #	Title	CDRL* Schedule	Future Delivery	Delivery 1	Extension Delivery	Comments
034A 034B	214/SE1	Information Technology Security Plan for Science System/Mission Systems	Final Science and Mission Systems Version December 15, 2000 <b>Maintained through EOC</b>			X/AR	Version to reflect security assessment requirements planned. Extension period update, as required.
035A 035B	215/SE3	Risk Management Plan for Science Systems/Mission Systems	Final Science and Mission Systems Version December 15, 2000 <b>Maintained through EOC</b>			X/AR	Version to reflect security assessment requirements planned. Extension period update, as required.
038	218/SE3	Project History & Lessons Learned	June-02	X			No future delivery planned. A pseudo-EOC version is satisfied by a jointly presented ESDIS/ECS Lessons Learned briefing. Additional program history information available via CCR history which is part of customer database..
039	219/SE1(F) 219/SE2(P)	Interface Requirements Documents	Completed New interfaces per DID 334	X			No future delivery planned, but change pages, resulting from any CCRs during the extension period, would be submitted.
043	302/DV1(P) 302/DV2(F)	ECS Facilities Plan	SDR -2 weeks Delivery per DID 334	X			No future delivery planned. CDRD says Delivery per the 334. Delivery was made in 1996 for Release B, per DAAC. Customer approved docs with comments.
045	304/DV1	Segment Requirements Specification	PDR/IDR - 2weeks Delivery per DID 334 <b>Maintained through EOC</b>		X (L3 Report) and EA	EA	Electronic delivery. Last formal delivery of document in 1996. Requirements transitioned to customer controlled Verification Database (VDB) post Mod86 Restructured Contract Requirement in 1999. ECS Level 3 Reconciliation Report provides the remaining in
046	305/DV3(P) 305/DV2(F) 305/DV2(UD)	Segment/Design Specifications	PDR/IDR - 2weeks CDR - 2 weeks (F) RRR -2 weeks (U/D) Delivery per DID 334 <b>Maintained through EOC</b>		X	X	EOC version delivered August 2002. Web page access to design information will also be available.
049	308/DV2	Software Development Plan	Completed <sup>1</sup>	X			No future delivery planned.
050	311/DV2	Database Design and Database Schema Specifications	PDR/IDR +1 month (P), CDR +1 month (F), RRR +1 month (U/D) Delivery per DID 334 <b>Maintained through EOC</b>		X	X/AR	CDRL consists of multiple volumes which are planned for EOC delivery. Document updates resulting from Synergy 3 updates will be generated on an as required basis during the extension period.
051	313/DV3	ECS Internal ICDs	PDR/IDR -2 weeks (P), CDR -2 weeks (F) Delivery per DID 334 <b>Maintained through EOC</b>		X	X/AR	EOC version delivered August 2002. Document updates resulting from ongoing ECS activities and Synergy 3 will be generated on an as required basis during the extension period.

# EOC and Extension CDRLS (cont.)



CDRL Item #	DID #	Title	CDRL* Schedule	Future Delivery	EOC Delivery <sup>1</sup>	Extension Delivery	Comments
062	333/DV1	PGS Toolkit Users Guide for the ECS Project	(F) SDR -6 months Delivery per DID 334		X	X/AR	EOC version planned. Will release in Extension on an as required basis, depending on ESDs or NCRs.
069	409/VE1	ECS Science Acceptance Test Plan	SDR -2 weeks Delivery per DID 334	X			Acceptance Test Plan prepared for releases prior to the IRR. No future delivery needed.
070	411/VE1	ECS Science Acceptance Test Procedures	3 months prior to RRR or per DID 334 <b>Maintained through EOC</b>		EA	EA	Electronic delivery. DID 411 procedures approved and posted to web prior to 6A acceptance (CSR). All procedures thru EOC have been posted. Synergy 3 procedures will be posted for electronic access as they are completed. This will cover pre and post EO
071	412/VE2	ECS Science Acceptance Test Report	Delivery per DID 334 <b>Maintained through EOC</b>		X		EOC version delivered in Jan 2002 after SRA for 6A. No subsequent formal release planned.
081	506/PA3	Audit Reports	RRR +4 weeks Delivery per DID 334		X		EOC version delivered for 6A.05 in January 2002. Current "real-time" PCA process eliminates need for future deliveries.
092	519/PA3	Maintainability Demonstration Test Reports	within 1 month of demonstration	X			No Maintainability Demonstration is applicable or planned for SDPS. GSFC 420-05-03 section 5.6 describes the Maintainability for critical real-time system functions and these exist in EMOS, but not in SDPS. The EOC RMA performance analysis of current D
102	529/PA3	Malfunctions/Failure Reports (MRs)	Electronic delivery		X/EA	X/EA	Electronic delivery. DDTs database satisfies this CDRL.
106	533/PA1	Response to Problem Notices and Alerts	As required	X			To date, no formal notices of hardware alerts have been received, so this no delivery is planned for this CDRL item.
107	534/PA1	Maintenance Records	On-going - available for review on request		X/EA	X/EA	Electronic delivery. Electronic database (ILM) will be delivered to customer, but hardcopy of specific records can also be requested in the interim.
108	535/PA1	Acceptance Data Package	Delivery per DID 334	X			Final version delivered for last formal release (6A) in January 2002. No future deliveries planned.
110	602/OP1	Property Management Plan	SDR -1 month after	X			Delivered June 2002. No future updates planned.
111	603/OP1	Operational Readiness Plan	SDR -6 months	X			Delivered for 6A.05 in January 2002. No future updates planned.

# EOC and Extension CDRLS (cont.)



CDRL Item #	DID #	Title	CDRL* Schedule	No Future Delivery	EOC Delivery <sup>1</sup>	Extension Delivery	Comments
115	608/OP1	ECS Operations Plan	Each calendar year	X			A delivery was made on 12/19/01. This doc is basically a manpower forecast, <b>no future delivery planned for this contract.</b>
116	609/OP1	Operations Tools Manual	CSR -2 weeks <b>Maintained through EOC</b>		X	X	EOC version delivered September 2002. Extension period update is planned to accommodate COTS upgrades after 9/5/2002, as well as those planned during the extension period.
117	611/OP3	Mission Operations Procedures	Delivery per DID 334 <b>Maintained through EOC</b>		X	X	planned. Updates introduced during extension period will be provided on an as required basis. However, with COTS upgrades and NCR changes anticipated, an extension period update is also anticipated.
124	618/OP3	Replacement Part List and Spare Parts List	Delivery per DID 334	X			Document submitted as final in Dec 2000. No additional spares planned during the extension period. Composition of ECS spares is recorded in the ILM database, which will be transitioned.
129	625/OP3	Training Material	Delivery per DID 334 <b>Maintained through EOC</b>		X	X	EOC version to reflect currently fielded system training information planned. Updates introduced during extension period will be provided on an as required basis. However, with COTS upgrades and NCR changes anticipated, an extension period update is al
143	714/PP3	CSR Presentation Package	2 weeks after CSR	X			No future delivery of this CDRL. The RRR presentation package will be delivered during the
146	222/SE2	COTS Analysis & Modeling Report	Semi-annually (April 1 & October 1)	X			spreadsheet. Contracts suspended delivery, pending decision. No current plans to deliver document.
147	334/DV1	Science System Release Plan	Submit and obtain government approval prior to start of work on science Release 5A, 5B, 6A, 6B	X			Final delivery made for last formal release (6A). No future delivery planned. Subsequent new capabilities and changes have been documented as part of the Release Notes and CCRs that are generated on an as required basis. This will continue during the ex
148	335/DV2	COTS (hardware and software) Deployment Plan	minimum of 6 months prior to deployment of COTS		X	X	EOC version delivered July 2002; delivery planned during extension period.
198A 198B	225/SE3	Security Contingency Plan for Science Systems/Mission Systems	Final Science and Mission Systems Version December 15, 2000 <b>Maintained through EOC</b>			X/AR	Version to reflect security assessment requirements planned. Extension period update, as required.